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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,270	01/05/2006	Yukio Kuramasu	96790P513	3356

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EXAMINER	
VANCHY JR, MICHAEL J	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,270	KURAMASU ET AL.	
	Examiner	Art Unit	
	MICHAEL VANCHY JR	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8,11,13,14 and 16-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8,11,13,14 and 16-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 8, 11, and 13-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 8, 11, 13, 14, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichani et al., 5,949,901, Tobin Jr., 5, 982,920, and further in view of Oguma, JP 10-170450.

Regarding claim 8, Nichani teaches identification of defects that are placed upon a table using a light-scattering system (Figure 1), capturing image data (col. 4,

lines 9-20), binarizing the image data to isolate the defects along with a threshold value (col. 6, lines 53-60). Nichani, however is silent on determining inclusions in a metal sample comprising aluminum. Tobin Jr., teaches a process that takes data from a "light-scattering system" (Fig. 9, col. 6, lines 20-24) to detect defects including inclusions within aluminum (col. 7, lines 1-15). Thus, taking the combined teachings, Nichani can be modified to determine defects upon aluminum to determine inclusions using the color image and binarizing with a threshold, since the setting of the threshold would not categorize a defect as an inclusion unless it was above a certain threshold (col. 7, lines 9-14). Both Nichani and Tobin Jr. are silent on using a reflection dome for the scattered light for defect detection, however Oguma does. Oguma a reflection dome disposed over said table and having a downward concave reflection surface of a semicircular section with an opening in the vicinity of a vertex thereof; a plurality of light sources which are mounted along an inner edge of said concave reflection surface of said reflection dome so as to emit light toward said reflection dome; an image sensing means, disposed over said opening of said reflection dome, for sensing an image of the fracture surface irradiated with the light (Abstract). It would be clear to one or ordinary skill in the art at the time on the inventions to modify Nichani and Tobin Jr., to include a reflection dome for defect inspection to allow for uniform illumination so that shades or light speckles are prevented from occurring.

Regarding claim 11, the Examiner takes into account that using light emitting diodes (LEDs) is notoriously well known in the art, and would be an obvious modification for the lighting used in Oguma.

Regarding claim 13, Nichani teaches a high-luminance region detection means for detecting an image region having a higher luminance than the threshold value from the image binarized by said binarizing means (col. 6, lines 53-60); and pixel count measuring means for measuring a pixel count of the image region detected by said high-luminance region detection means (col. 7, lines 9-14). The Examiner takes into

account that determining the pixel count of the defect is synonymous with determining the properties of any defect such as the size.

Regarding claim 14, Nichani teaches an impurity region recognizing means for recognizing the image region detected by said high-luminance region detection means as an impurity region when the pixel count measured by said pixel count measuring means is larger than a predetermined pixel count, and avoiding recognizing the detected image region as an impurity region when the measured pixel count is smaller than the predetermined pixel count (col. 7, lines 9-14). The Examiner takes into account that determining the size of the defect in Nichani is used as a threshold if the defect necessitates a rejection of the semiconductor die, which is synonymous with determining the pixel count. Nichani however, is silent on teaching this for inclusions, however, as discussed above Tobin Jr. teaches determining inclusions within aluminum (col. 7, lines 1-15) for a "light-scattering system."

Regarding claim 16, Nichani teaches using a capturing device such as a conventional video camera (an example of a CCD camera) (col. 4, lines 9-20). Oguma teaches using a CCD camera ([0006])

Regarding claim 19, Nichani teaches further comprising a ring member mounted along the inner edge of said concave reflection surface of said reflection dome, wherein said lighting is disposed on said ring member ([0009]). The Examiner takes into account that using light emitting diodes (LEDs) is notoriously well known in the art, and would be an obvious modification for the lighting used in Oguma.

4. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichani et al., 5,949,901, Tobin Jr., 5, 982,920, and further in view of Oguma, JP 10-170450 and further in view of White et. al, 5,461,417.

Oguma teaches a reflection dome, however Oguma is silent on being able to move the dome and sensing means. **Regarding claims 17 and 18**, White does not explicitly teach the ability of the dome to be movable, however, since the light projector, light source and light diffusion panel can all be adjusted (col. 8, lines 53-58), it would be clear to one of ordinary skill in the art. It would be clear to one of ordinary skill in the art to modify the dome in Oguma to adjust the light source a diffusion panel so that the dome can be implicitly moved as well as to compensate for uniform illumination across objects of different sizes or at different working distances.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571)

270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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